

REMARKS

Status of the Claims:

Claims 1 – 25 and 62 are currently pending.

Claims 1 – 17 and 62 are currently rejected.

Claims 18 – 25 are allowed.

Claim 2 is currently amended.

Claims 26 – 61 are cancelled.

Amendments to the Claims:

No new matter has been introduced by way of the claim amendments.

Claim 2 is presently amended to add new elements of computational hardware and software. Further, claim 2 is amended to clarify that the database is accessible. Support for these amendments may be found in at least paragraphs [0036] and [0038] of the instant specification.

I. Claim Rejections Under 35 U.S.C. § 102(b)

Claims 1, 3 – 17 and 62 presently stand rejected under 35 U.S.C. § 102(b) as being anticipated by Dharap, *et al.*, "Nanotube film based on single-wall carbon nanotubes for strain sensing", *Nanotechnology*, 15:2004, pp. 379 – 382 (hereinafter, *Dharap*). Office Action page 2 – 3, items 2 – 14.

Applicants respectfully traverse the Examiner's rejection of claims 1, 3 – 17 and 62 based on *Dharap* at least because *Dharap* may not be properly cited as prior art under 35 U.S.C. § 102(b). The instant application is a U.S. national stage submission under 35 U.S.C. § 371 having a filing date of March 6, 2006. The instant application further claims the priority of PCT application PCT/US04/017008 having a filing date of January 23, 2004, which in turn claims the priority of United States provisional patent application serial number 60/442,134 (hereinafter,

the '134 application) having a filing date of January 23, 2003. Hence, the instant application has an earliest effective filing date of January 23, 2003. *Dharap* has a publication date of January 13, 2004, which does not predate the earliest effective filing date of the instant application by more than one year. Therefore, *Dharap* may not be properly cited as prior art under 35 U.S.C. § 102(b).

The rejected claims are fully supported by the '134 application under 35 U.S.C. § 112, first paragraph. Support for the rejected claims is established in the '134 application in at least the following locations set forth hereinbelow. Citations are quoted directly from the '134 application from the indicated section(s) of the written description and/or claim(s). Further comments are provided in certain instances.

Claim 1:

"The system is a composite with nanotubes dispersed in a way to sense stress internally through electrical contacts.;" "...four point probing is used." ('134 application page 1, Section a)
"at least one carbon nanotube; a four-point electrical probe; and electrical measurements made with the four-point probe[are sensitive] to mechanical conditions in a quantifiable manner based upon previously measured standards." ('134 application claim 1)

Claim 3:

"...four point probing is used." ('134 application page 1, Section a)
"a four-point electrical probe" ('134 application claim 1)

Claim 4:

"...changes in the electrical conductivity of the material can be correlated to changes in pressure or impact energy." ('134 application page 3, Section c)
"conductivity" ('134 application claim 2); "resistivity" ('134 application claim 3)

Claim 5:

"...displacement, stress and/or strain." ('134 application page 1, Section a)
"impact energy" ('134 application page 3, Section c)
"displacement, stress, strain and combinations thereof" ('134 application claim 4)

Claim 6:

"...various forms of nanotubes can be used." ('134 application page 1, Section a); also see ('134 application page 4, Section g)

*"Single wall nanotubes were used to demonstrate...." ('134 application page 2, Section b)
"single-wall-carbon nanotubes" ('134 application claim 5); "multi-wall carbon nanotubes" ('134 application claim 6). Double-wall carbon nanotubes can be considered an embodiment of multi-wall carbon nanotubes.*

Claim 7:

*"...separated...nanotubes can be used." ('134 application page 1, Section a)
"...various nanotubes can be used and in various configurations, conditions of separation...."
('134 application page 4, Section g)*

Claim 8:

*"...various forms of nanotubes can be used including functionalized and wrapped systems."
('134 application page 1, Section a)
"carbon nanotube(s) are chemically derivatized" ('134 application claim 10)*

Claim 9:

"array" ('134 application claim 7); "mat" ('134 application claim 8); "bucky-paper" ('134 application claim 9)

Claim 10:

*"The system is coated fibers in an epoxy matrix...." ('134 application page 1, Section a)
"incorporated into a matrix material" ('134 application claim 11)*

Claim 11:

*"add-on sensor" ('134 application page 1, Section a). An add-on sensor is inherently attached to a material.
"...adhered to an aircraft wing..." ('134 application page 2, Section b). An aircraft wing is considered a material.*

Claim 12:

*"embedded sensor" ('134 application page 1, Section a). An embedded sensor is incorporated into an article of manufacture.
"...placed within seals and seams...." ('134 application page 2, Section b). Seals and seams are within an article of manufacture or considered as an article of manufacture alone.*

Claim 13:

"...aircraft, automobiles, buildings, engines, spacecraft, and etc." ('134 application page 1, Section a)

Claim 14:

"add-on sensor" ('134 application page 1, Section a). An add-on sensor is inherently attached to an article of manufacture.

"...adhered to an aircraft wing...." ('134 application page 2, Section b).

Claim 15:

"...aircraft, automobiles, buildings, engines, spacecraft, and etc." ('134 application page 1, Section a)

Claim 16:

"two-dimensional network" ('134 application claim 12)

Claim 17:

"three-dimensional network" ('134 application claim 13)

Furthermore, to the extent that independent claim 1 is fully supported by the '134 application and is not anticipated by *Dharap*, none of the claims dependent on claim 1 are anticipated by *Dharap* in any of their various claimed embodiments. In view of the foregoing remarks, Applicants respectfully request that the Examiner's rejection of claims 1, 3 – 17 and 62 under 35 U.S.C. § 102(b) be withdrawn.

II. Claim Rejections Under 35 U.S.C. § 101

Claim 2 presently stands rejected under 35 U.S.C. § 101 as directed to non-statutory subject matter. Office Action page 4, item 15.

The Examiner asserts that claim 2 recites a database without a corresponding tangible medium in which the data structure is housed. Further, the Examiner asserts that claim 2 does not recite that the database correlates a measured electrical property to the mechanical conditions by using a processor running a set of instructions encoded in a computer readable medium. Hence, the Examiner asserts that the claim does not link the data structures so as to provoke change in the device.

As stated in MPEP 2106.01, a claim reciting a computer program contains statutory subject matter under 35 U.S.C. § 101 if the following condition is met:

"Computer programs are often recited as part of a claim. USPTO personnel should determine whether the computer program is being claimed as part of an otherwise statutory manufacture or machine. In such a case, the claim remains statutory irrespective of the fact that a computer program is included in the claim. The same result occurs when a computer program is used in a computerized process where the computer executes the instructions set forth in the computer program. Only when the claimed invention taken as a whole is directed to a mere program listing, i.e., to only its description or expression, is it descriptive material *per se* and hence nonstatutory." (emphasis added)

Applicants have amended claim 2 to include further elements of computational hardware and software. Further, Applicants have clarified that the database recited in claim 2 is an accessible database for correlating the electrical property to the mechanical conditions. In view of the foregoing amendments, Applicants respectfully assert that claim 2 constitutes statutory subject matter under 35 U.S.C. § 101 and provides linking structure sufficient to promote change in the device as claimed.

In view of the foregoing, Applicants respectfully request that the Examiner's rejection of claim 2 under 35 U.S.C. § 101 be withdrawn.

III. Allowable Subject Matter

Claims 18 – 25 are allowed. Office Action page 4, item 16. Applicants acknowledge the allowance of these claims for the reasons previously set forth in the record.

CONCLUSIONS

Claims 1 – 25 and 62 are presently pending in the application. Applicants respectfully submit that claims 1 – 25 and 62, as these claims presently stand amended, are in a condition for allowance based on the remarks presented hereinabove.

If additional fees are due and are not included, the Director is hereby authorized to charge any fees or credit any overpayment to Deposit Account Number 23-2426 of Winstead PC (referencing matter 11321-P061WOUS).

If the Examiner has any questions or comments concerning this paper or the present application in general, the Examiner is invited to call the undersigned at 713-650-2764.

Respectfully submitted,

WINSTEAD PC

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